FIG. 1

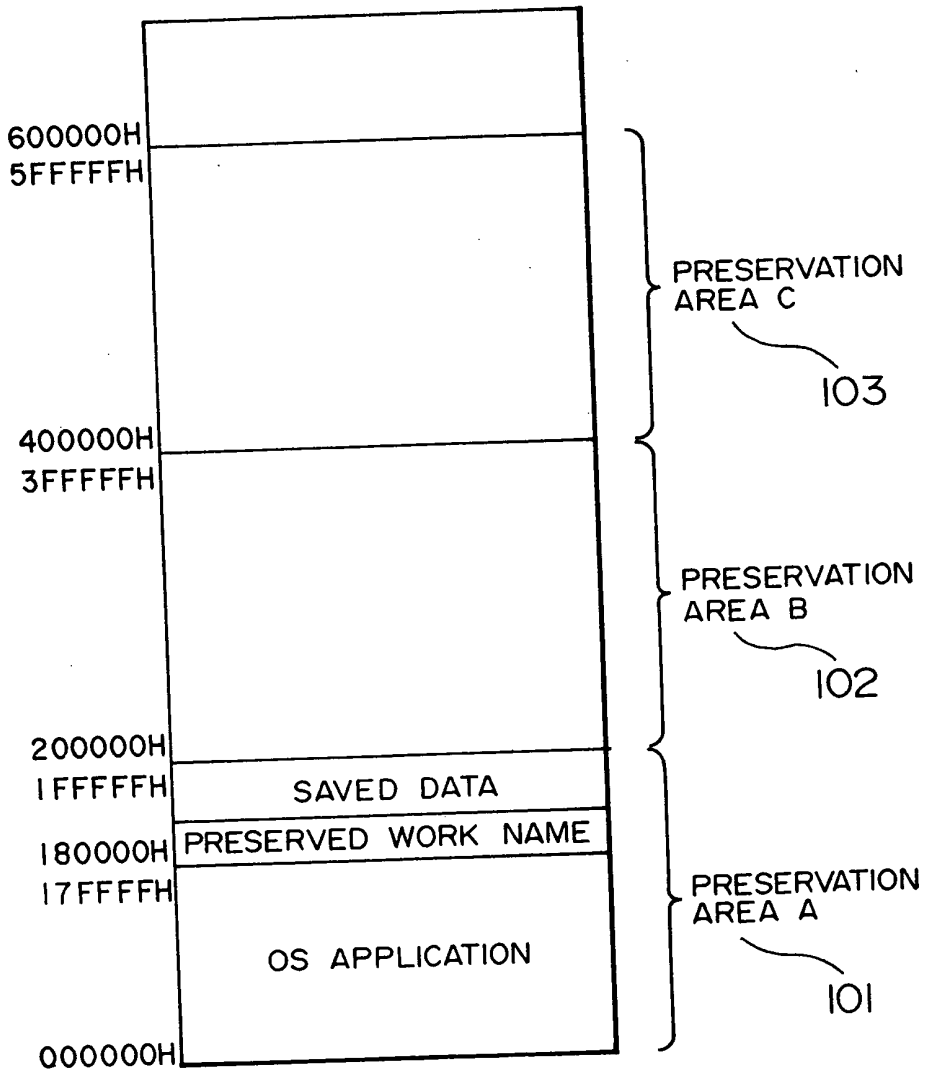

600000H
5FFFFFH
400000H
3FFFFFH
200000H
1FFFFFH
180000H
17FFFFH
000000H
SAVED DATA
PRESERVED WORK NAME
OS APPLICATION
PRESERVATION AREA C
103
PRESERVATION AREA B
102
PRESERVATION AREA A
101

FIG. 2

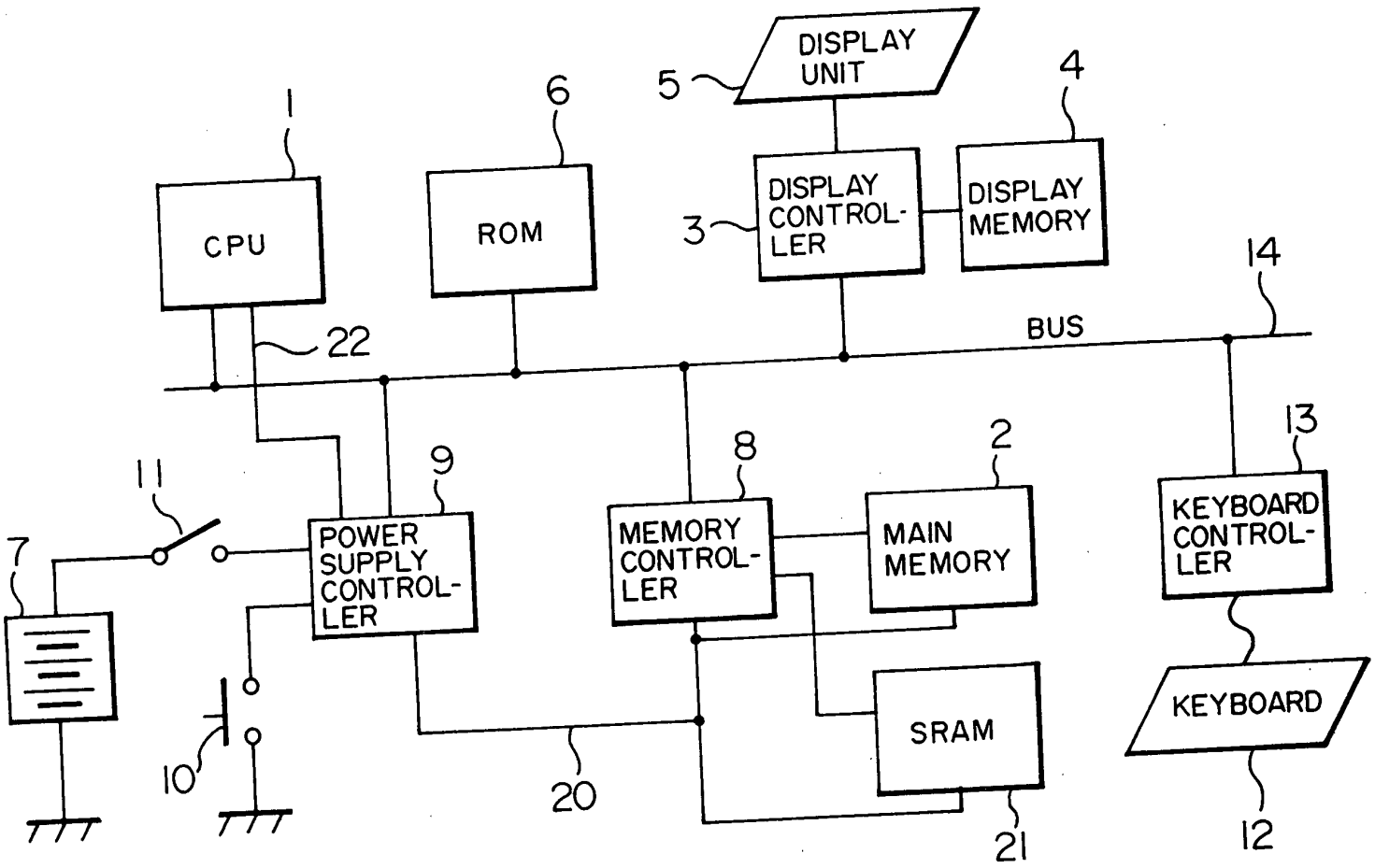

DISPLAY UNIT
5
4
1
6
CPU
ROM
DISPLAY CONTROL-LER
3
DISPLAY MEMORY
14
22
BUS
11
9
8
2
13
7
POWER SUPPLY CONTROL-LER
MEMORY CONTROL-LER
MAIN MEMORY
KEYBOARD CONTROL-LER
SRAM
KEYBOARD
10
20
21
12

FIG. 3

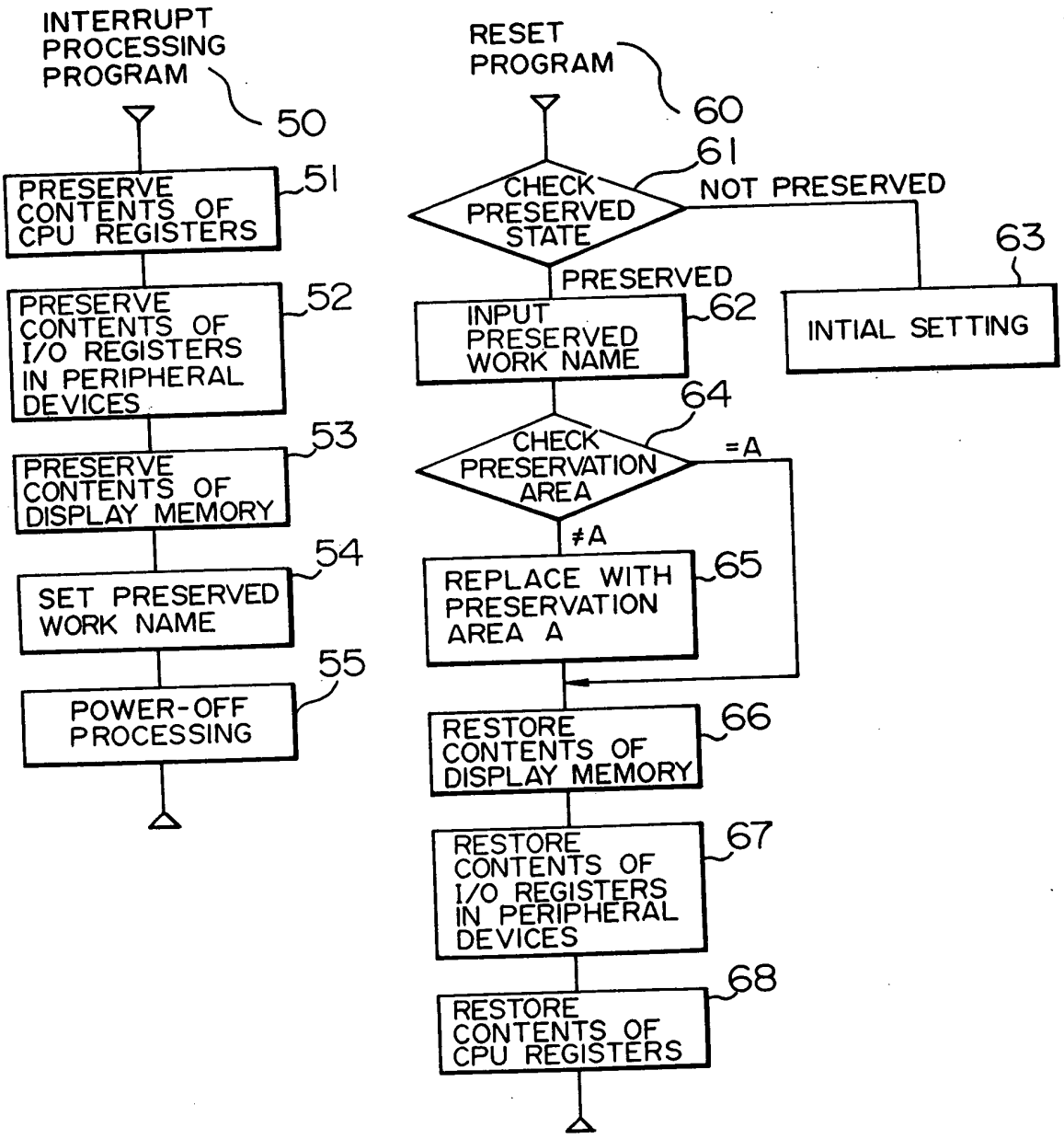

INTERRUPT PROCESSING PROGRAM
50
PRESERVE CONTENTS OF CPU REGISTERS
51
PRESERVE CONTENTS OF I/O REGISTERS IN PERIPHERAL DEVICES
52
PRESERVE CONTENTS OF DISPLAY MEMORY
53
SET PRESERVED WORK NAME
54
POWER-OFF PROCESSING
55
RESET PROGRAM
60
CHECK PRESERVED STATE
61
NOT PRESERVED
PRESERVED
INPUT PRESERVED WORK NAME
62
INTIAL SETTING
63
CHECK PRESERVATION AREA
64
=A
≠A
REPLACE WITH PRESERVATION AREA A
65
RESTORE CONTENTS OF DISPLAY MEMORY
66
RESTORE CONTENTS OF I/O REGISTERS IN PERIPHERAL DEVICES
67
RESTORE CONTENTS OF CPU REGISTERS
68

FIG. 4

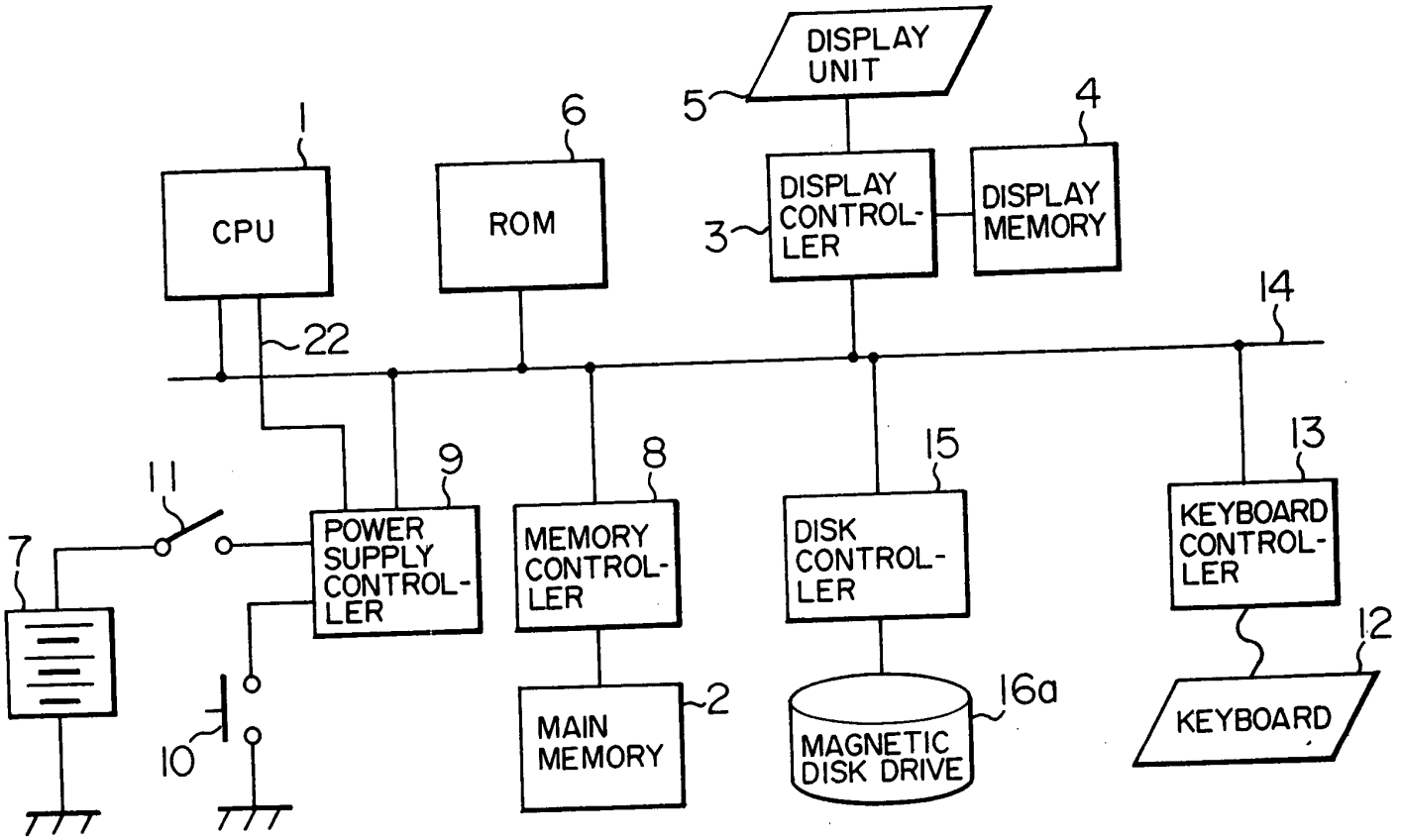

DISPLAY UNIT
5
4
1
6
CPU
ROM
DISPLAY CONTROL-LER
3
DISPLAY MEMORY
14
22
11
9
8
15
13
7
POWER SUPPLY CONTROL-LER
MEMORY CONTROL-LER
DISK CONTROL-LER
KEYBOARD CONTROL-LER
12
10
MAIN MEMORY
2
16a
MAGNETIC DISK DRIVE
KEYBOARD

FIG. 5

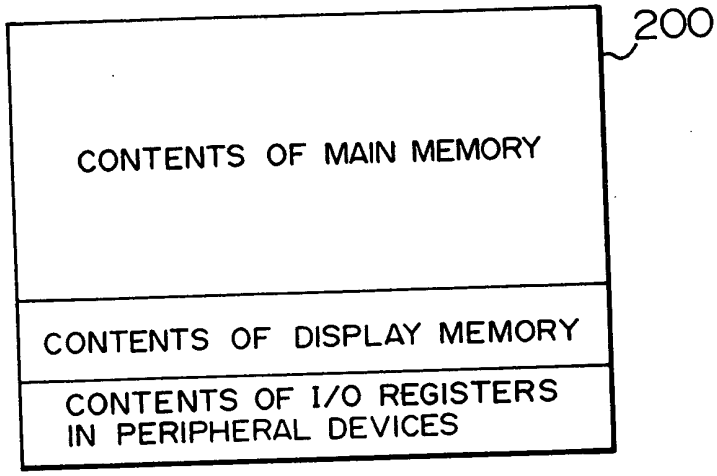

200
CONTENTS OF MAIN MEMORY
CONTENTS OF DISPLAY MEMORY
CONTENTS OF I/O REGISTERS IN PERIPHERAL DEVICES

FIG. 6

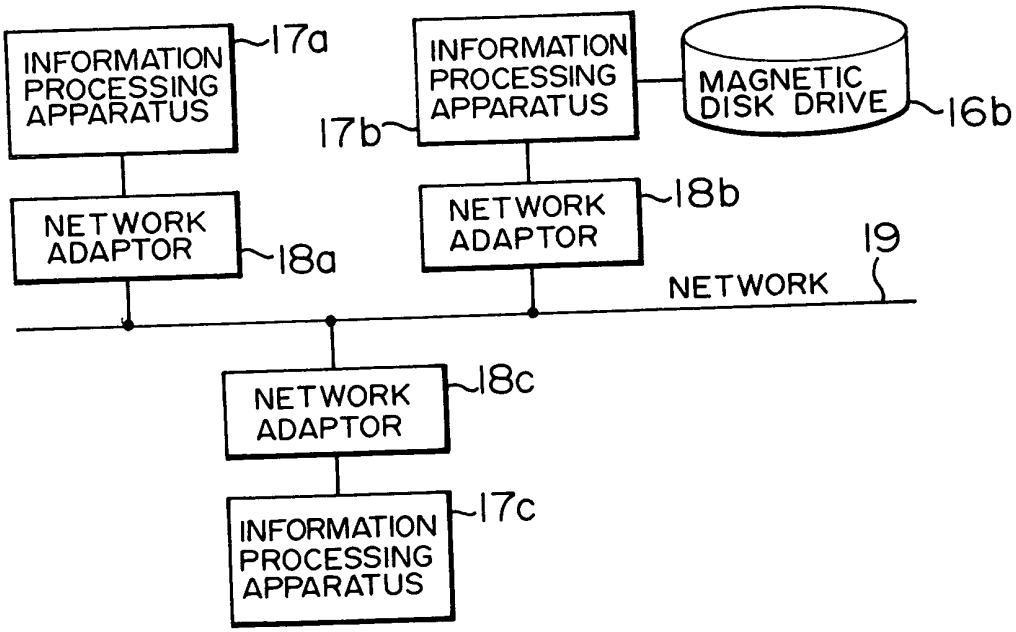

INFORMATION PROCESSING APPARATUS
17a
INFORMATION PROCESSING APPARATUS
17b
MAGNETIC DISK DRIVE
16b
NETWORK ADAPTOR
18a
NETWORK ADAPTOR
18b
19
NETWORK
NETWORK ADAPTOR
18c
INFORMATION PROCESSING APPARATUS
17c

FIG. 7

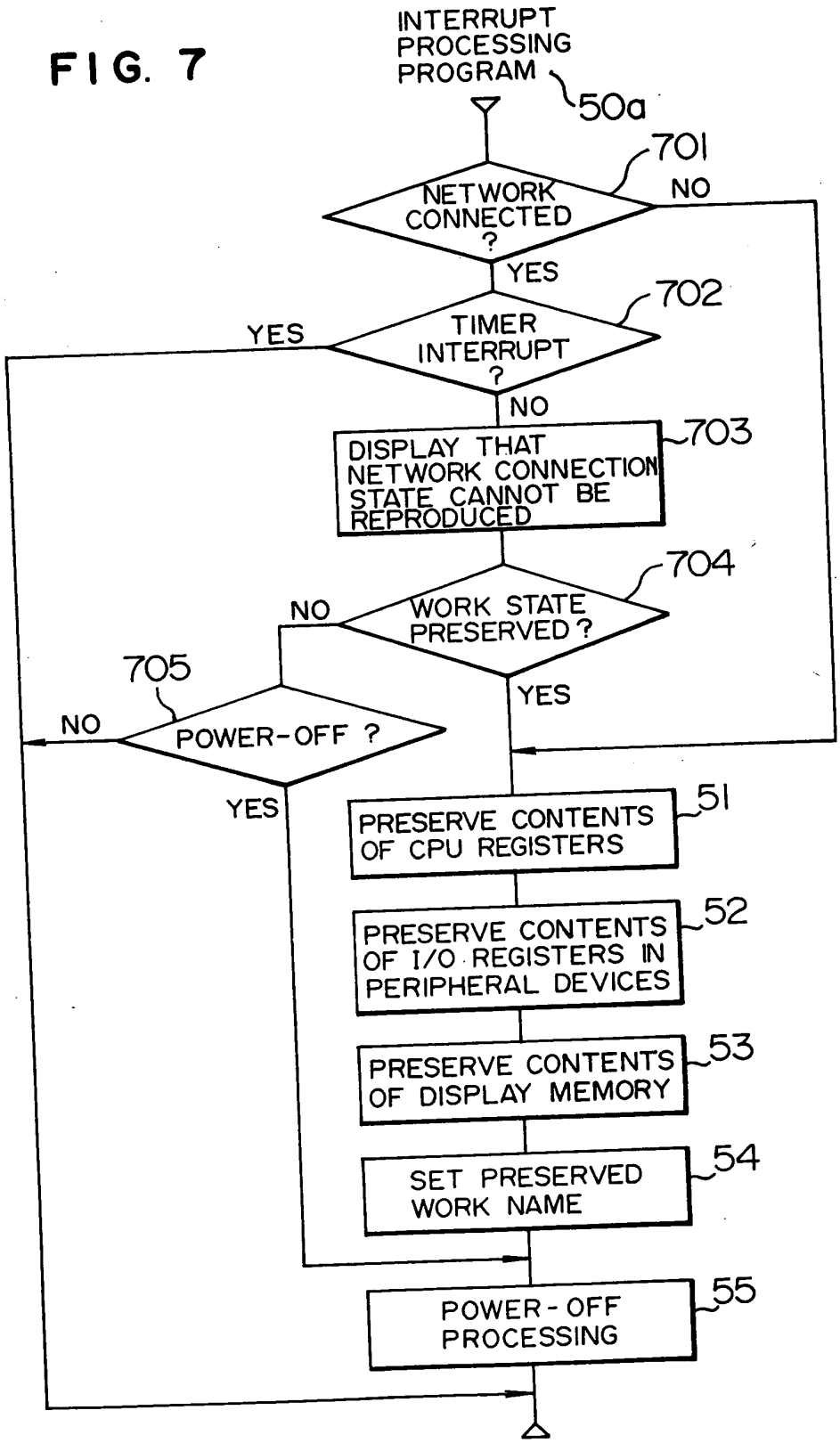

INTERRUPT PROCESSING PROGRAM
50a
701
NETWORK CONNECTED ?
NO
YES
702
TIMER INTERRUPT ?
YES
NO
703
DISPLAY THAT NETWORK CONNECTION STATE CANNOT BE REPRODUCED
704
WORK STATE PRESERVED ?
NO
YES
705
POWER-OFF ?
NO
YES
51
PRESERVE CONTENTS OF CPU REGISTERS
52
PRESERVE CONTENTS OF I/O REGISTERS IN PERIPHERAL DEVICES
53
PRESERVE CONTENTS OF DISPLAY MEMORY
54
SET PRESERVED WORK NAME
55
POWER-OFF PROCESSING

FIG. 8

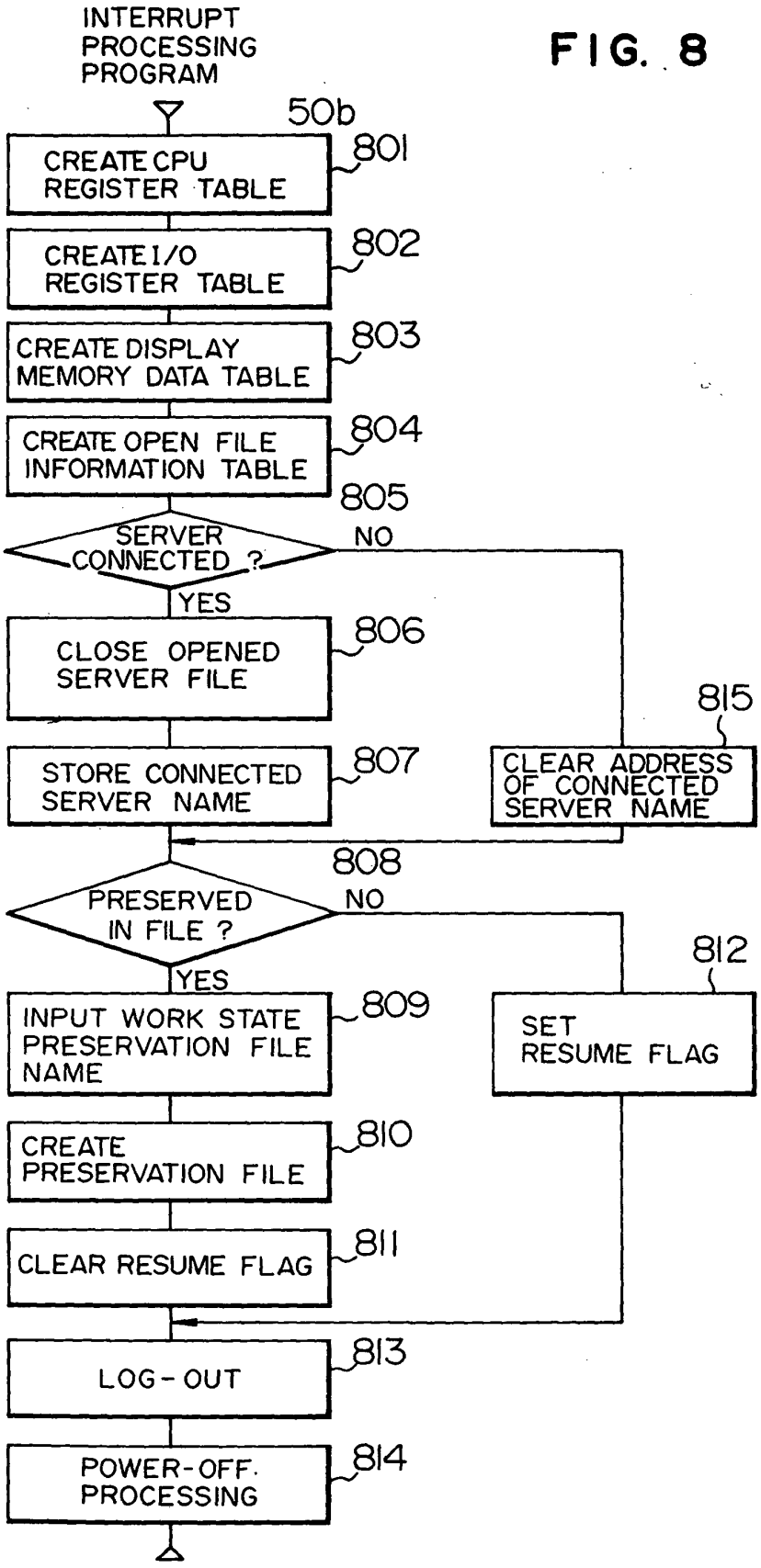

INTERRUPT PROCESSING PROGRAM
50b
CREATE CPU REGISTER TABLE
801
CREATE I/O REGISTER TABLE
802
CREATE DISPLAY MEMORY DATA TABLE
803
CREATE OPEN FILE INFORMATION TABLE
804
805
SERVER CONNECTED ?
NO
YES
CLOSE OPENED SERVER FILE
806
STORE CONNECTED SERVER NAME
807
815
CLEAR ADDRESS OF CONNECTED SERVER NAME
808
PRESERVED IN FILE ?
NO
YES
812
INPUT WORK STATE PRESERVATION FILE NAME
809
SET RESUME FLAG
CREATE PRESERVATION FILE
810
CLEAR RESUME FLAG
811
LOG-OUT
813
POWER-OFF. PROCESSING
814

FIG. 9

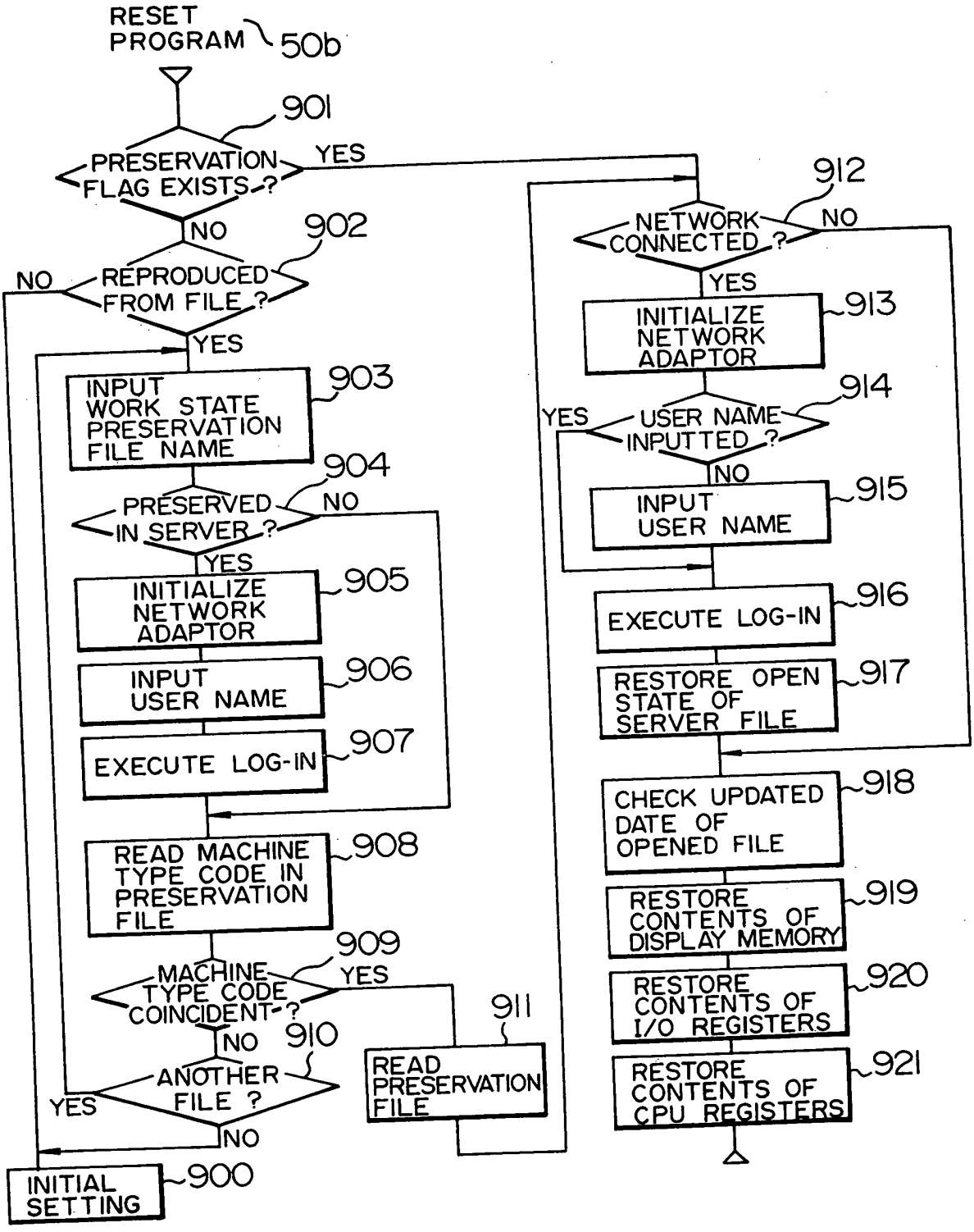

RESET PROGRAM
50b
901
PRESERVATION FLAG EXISTS ?
YES
NO
902
REPRODUCED FROM FILE ?
NO
YES
903
INPUT WORK STATE PRESERVATION FILE NAME
904
PRESERVED IN SERVER ?
NO
YES
905
INITIALIZE NETWORK ADAPTOR
906
INPUT USER NAME
907
EXECUTE LOG-IN
908
READ MACHINE TYPE CODE IN PRESERVATION FILE
909
MACHINE TYPE CODE COINCIDENT ?
YES
NO
910
ANOTHER FILE ?
YES
NO
911
READ PRESERVATION FILE
900
INITIAL SETTING
912
NETWORK CONNECTED ?
NO
YES
913
INITIALIZE NETWORK ADAPTOR
914
USER NAME INPUTTED ?
YES
NO
915
INPUT USER NAME
916
EXECUTE LOG-IN
917
RESTORE OPEN STATE OF SERVER FILE
918
CHECK UPDATED DATE OF OPENED FILE
919
RESTORE CONTENTS OF DISPLAY MEMORY
920
RESTORE CONTENTS OF I/O REGISTERS
921
RESTORE CONTENTS OF CPU REGISTERS

FIG. 10

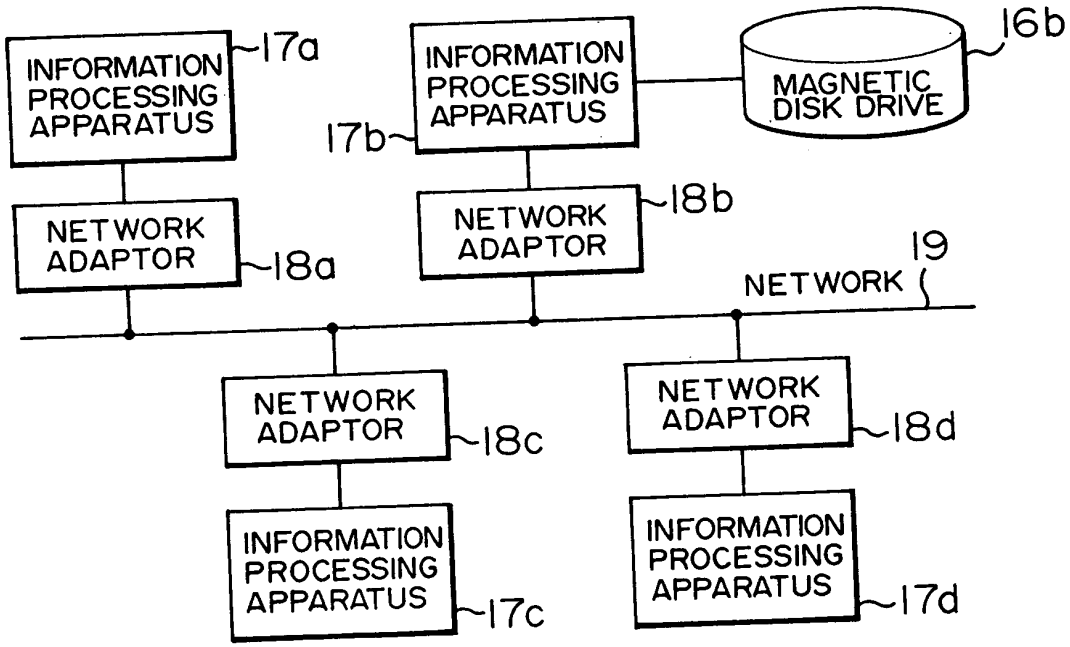

INFORMATION PROCESSING APPARATUS
17a
INFORMATION PROCESSING APPARATUS
17b
MAGNETIC DISK DRIVE
16b
NETWORK ADAPTOR
18a
NETWORK ADAPTOR
18b
19
NETWORK
NETWORK ADAPTOR
18c
NETWORK ADAPTOR
18d
INFORMATION PROCESSING APPARATUS
17c
INFORMATION PROCESSING APPARATUS
17d

FIG. 11

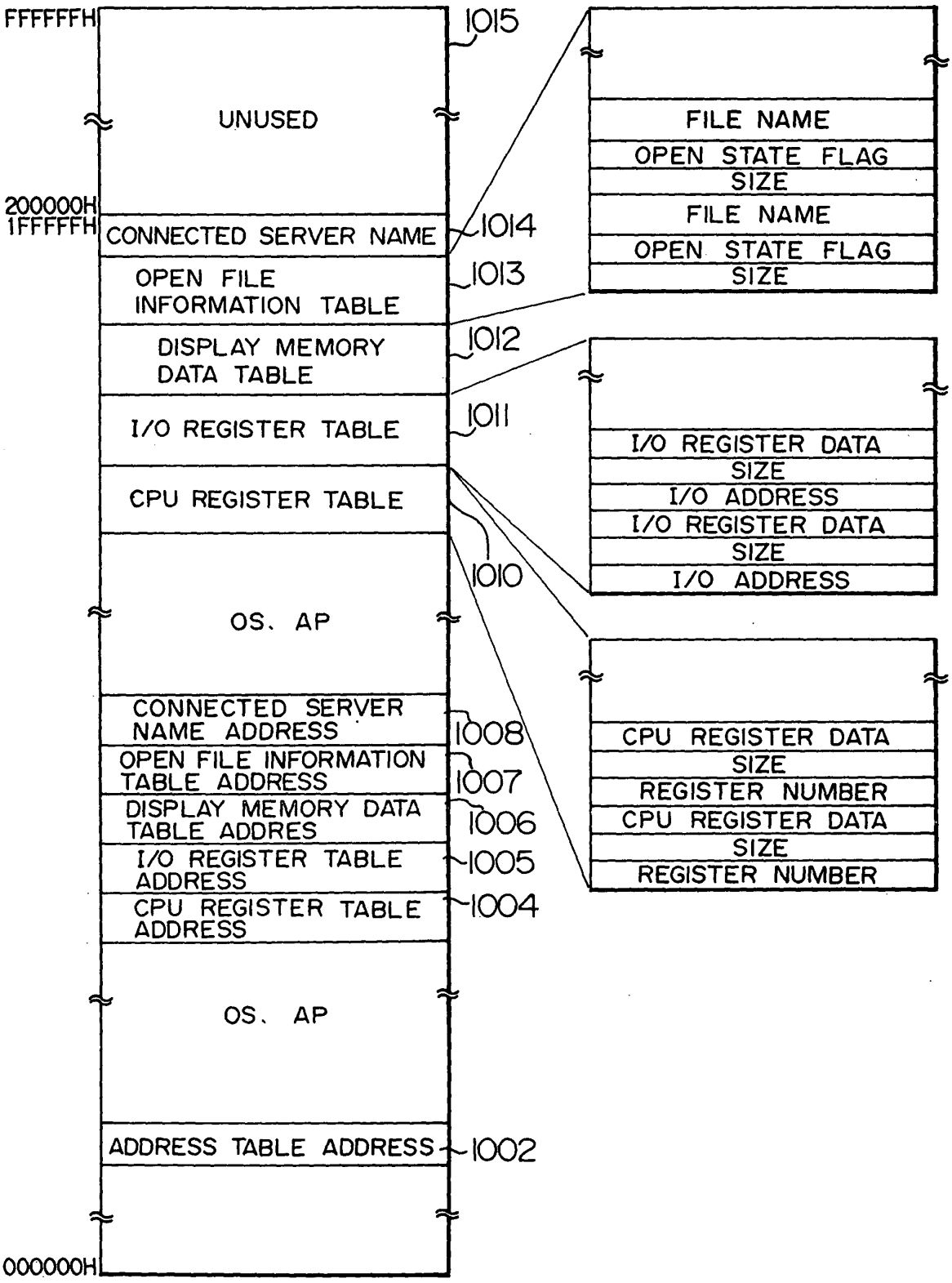

FFFFFFH
UNUSED
200000H
1FFFFFH
CONNECTED SERVER NAME
OPEN FILE INFORMATION TABLE
DISPLAY MEMORY DATA TABLE
I/O REGISTER TABLE
CPU REGISTER TABLE
OS. AP
CONNECTED SERVER NAME ADDRESS
OPEN FILE INFORMATION TABLE ADDRESS
DISPLAY MEMORY DATA TABLE ADDRES
I/O REGISTER TABLE ADDRESS
CPU REGISTER TABLE ADDRESS
OS. AP
ADDRESS TABLE ADDRESS
000000H
1015
1014
1013
1012
1011
1010
1008
1007
1006
1005
1004
1002
FILE NAME
OPEN STATE FLAG
SIZE
FILE NAME
OPEN STATE FLAG
SIZE
I/O REGISTER DATA
SIZE
I/O ADDRESS
I/O REGISTER DATA
SIZE
I/O ADDRESS
CPU REGISTER DATA
SIZE
REGISTER NUMBER
CPU REGISTER DATA
SIZE
REGISTER NUMBER

FIG. 12

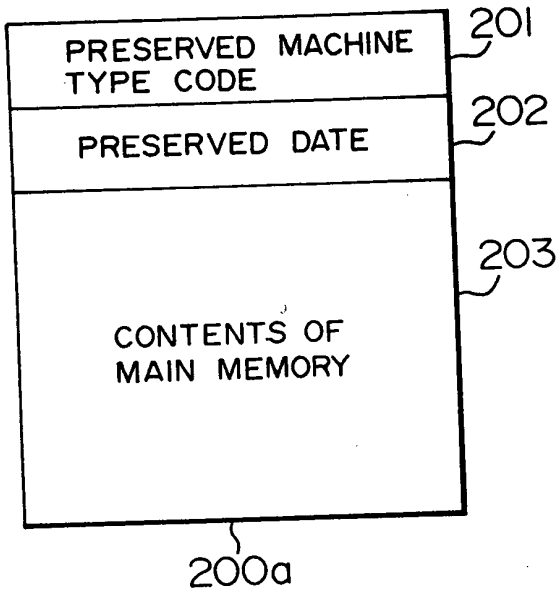

PRESERVED MACHINE TYPE CODE
201
PRESERVED DATE
202
CONTENTS OF MAIN MEMORY
203
200a

FIG. 13

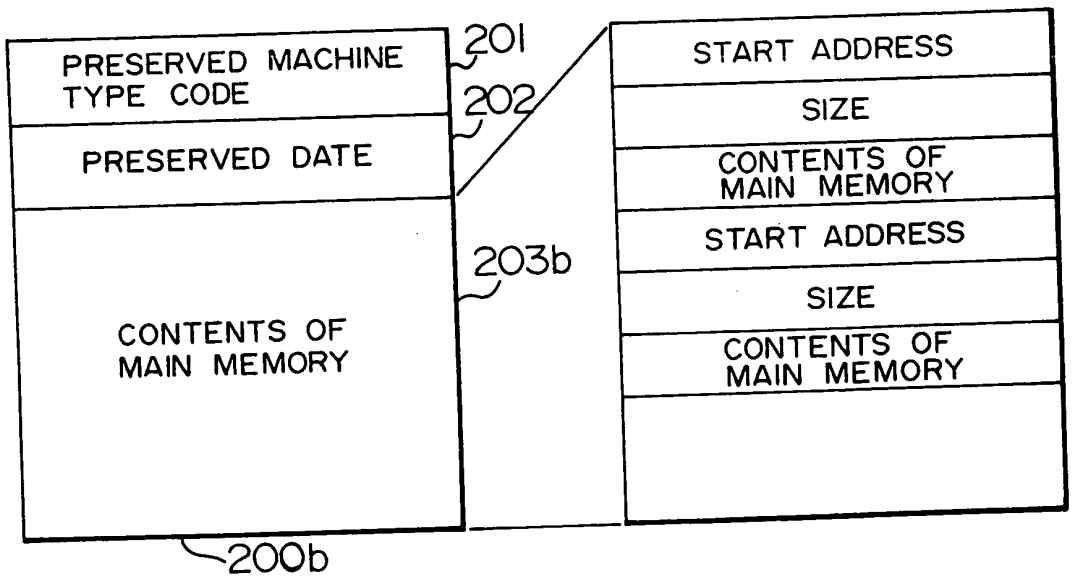

PRESERVED MACHINE TYPE CODE
201
PRESERVED DATE
202
CONTENTS OF MAIN MEMORY
203b
START ADDRESS
SIZE
CONTENTS OF MAIN MEMORY
START ADDRESS
SIZE
CONTENTS OF MAIN MEMORY
200b

FIG. 14

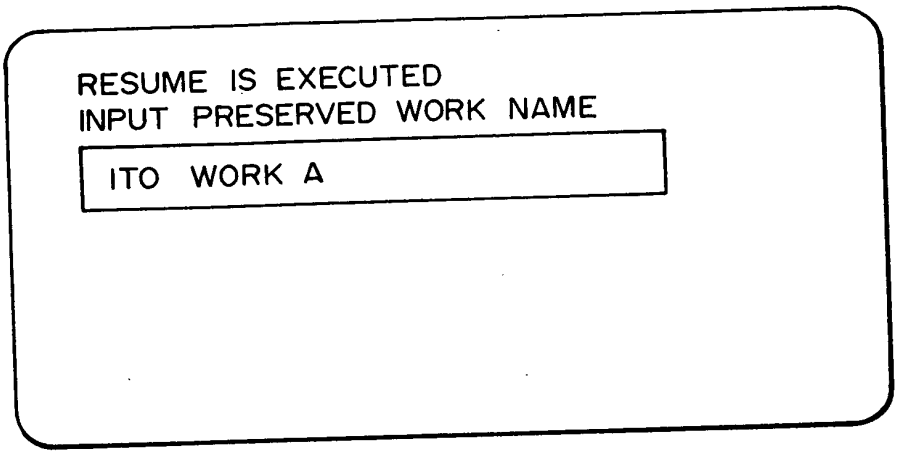

RESUME IS EXECUTED
INPUT PRESERVED WORK NAME
ITO WORK A

FIG. 15

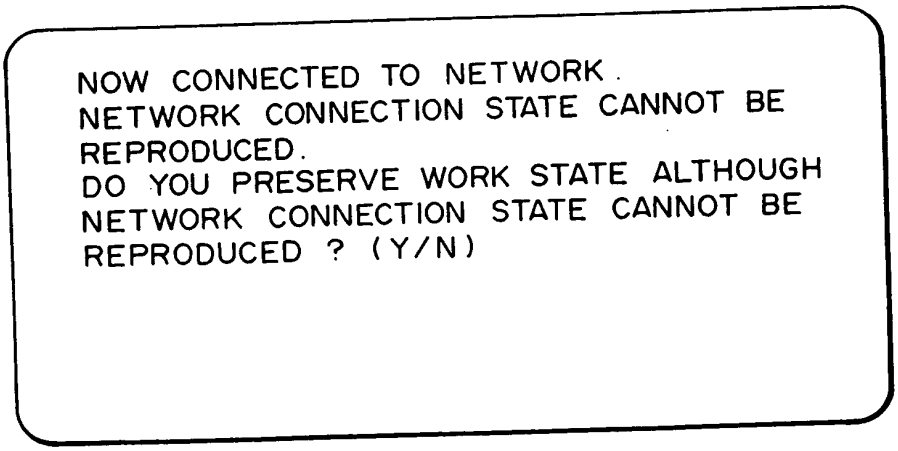

NOW CONNECTED TO NETWORK.
NETWORK CONNECTION STATE CANNOT BE REPRODUCED.
DO YOU PRESERVE WORK STATE ALTHOUGH NETWORK CONNECTION STATE CANNOT BE REPRODUCED ? (Y/N)

FIG. 16

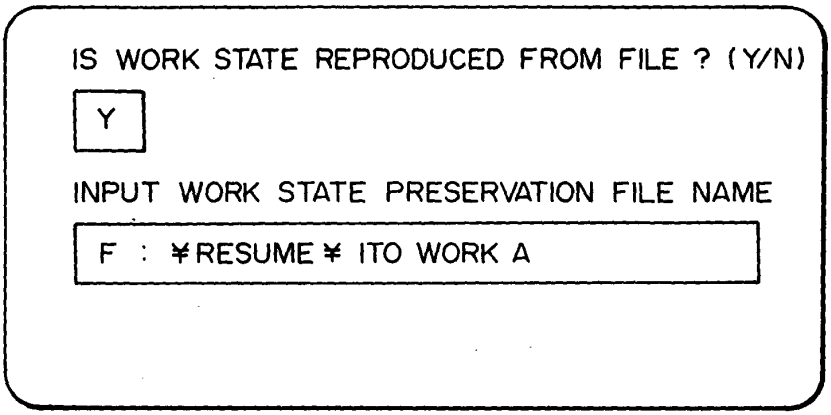

IS WORK STATE REPRODUCED FROM FILE ? (Y/N)
Y
INPUT WORK STATE PRESERVATION FILE NAME
F : ¥RESUME¥ ITO WORK A

FIG. 17

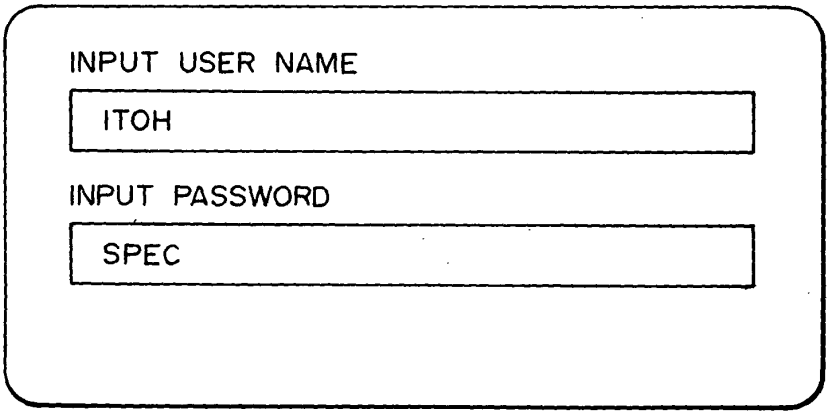

INPUT USER NAME
ITOH
INPUT PASSWORD
SPEC

FIG. 18

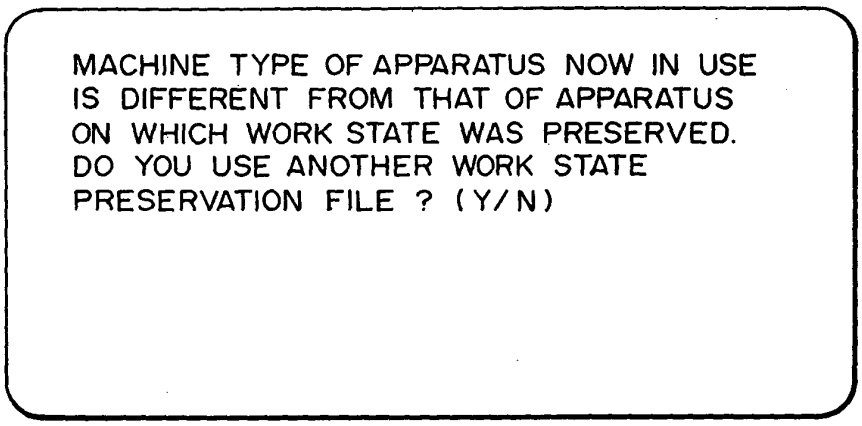

MACHINE TYPE OF APPARATUS NOW IN USE
IS DIFFERENT FROM THAT OF APPARATUS
ON WHICH WORK STATE WAS PRESERVED.
DO YOU USE ANOTHER WORK STATE
PRESERVATION FILE ? (Y/N)

FIG. 19

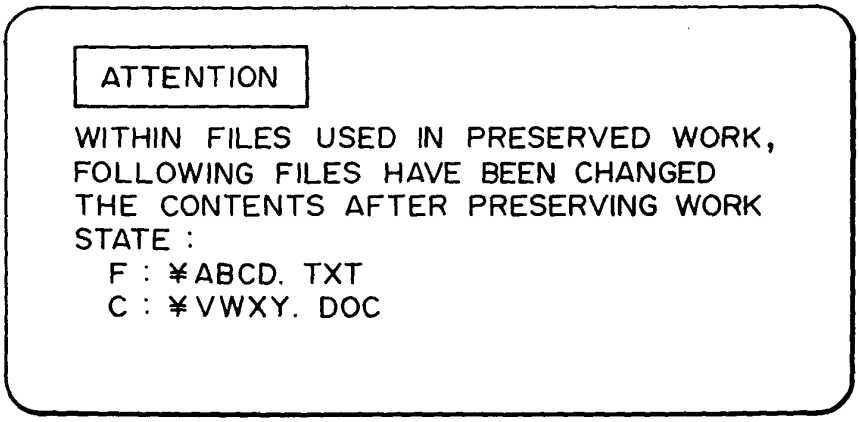

ATTENTION
WITHIN FILES USED IN PRESERVED WORK,
FOLLOWING FILES HAVE BEEN CHANGED
THE CONTENTS AFTER PRESERVING WORK
STATE :
F : ¥ABCD. TXT
C : ¥VWXY. DOC

FIG. 20

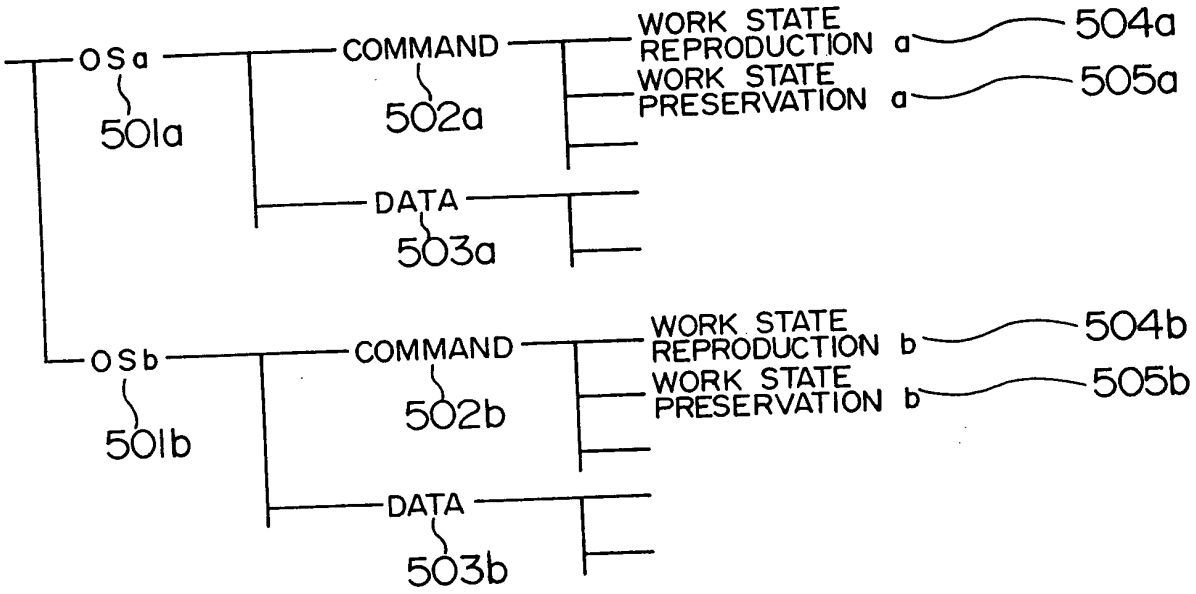

OSa
501a
COMMAND
502a
WORK STATE REPRODUCTION a
504a
WORK STATE PRESERVATION a
505a
DATA
503a
OSb
501b
COMMAND
502b
WORK STATE REPRODUCTION b
504b
WORK STATE PRESERVATION b
505b
DATA
503b

FIG. 21

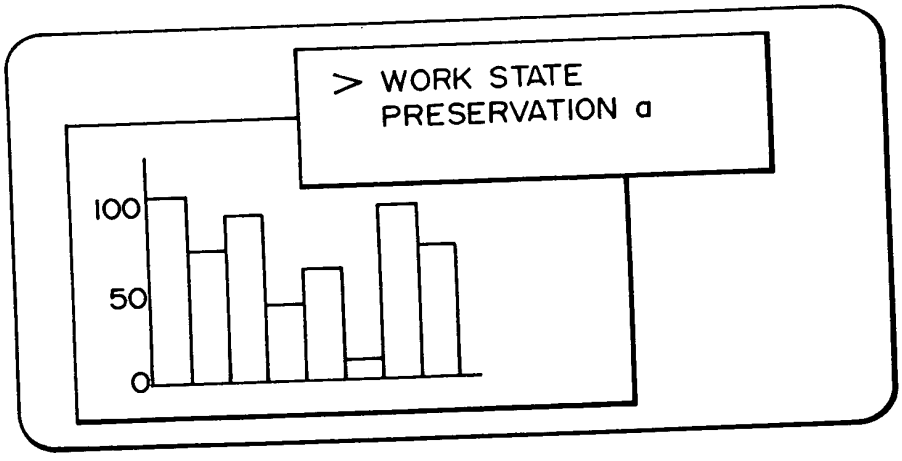

> WORK STATE PRESERVATION a
100
50
0

FIG. 22

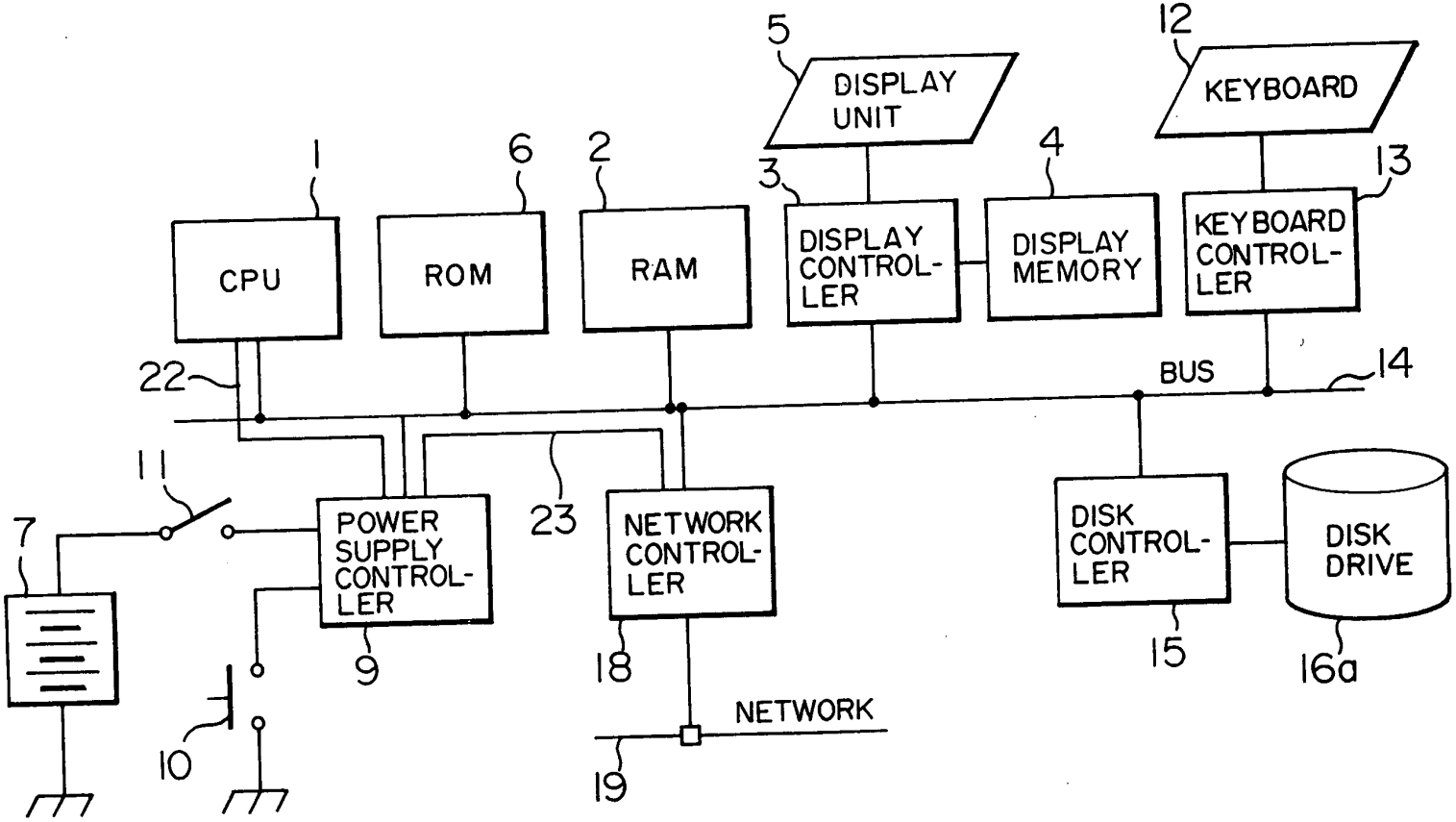

5
DISPLAY UNIT
12
KEYBOARD
1
6
2
3
4
13
CPU
ROM
RAM
DISPLAY CONTROL-LER
DISPLAY MEMORY
KEYBOARD CONTROL-LER
22
BUS
14
11
7
POWER SUPPLY CONTROL-LER
23
NETWORK CONTROL-LER
DISK CONTROL-LER
DISK DRIVE
9
18
15
16a
10
NETWORK
19

FIG. 23

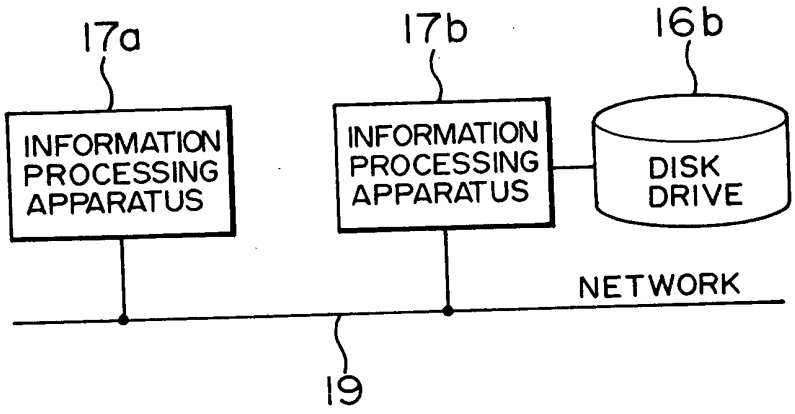

17a
17b
16b
INFORMATION PROCESSING APPARATUS
INFORMATION PROCESSING APPARATUS
DISK DRIVE
NETWORK
19

FIG. 24

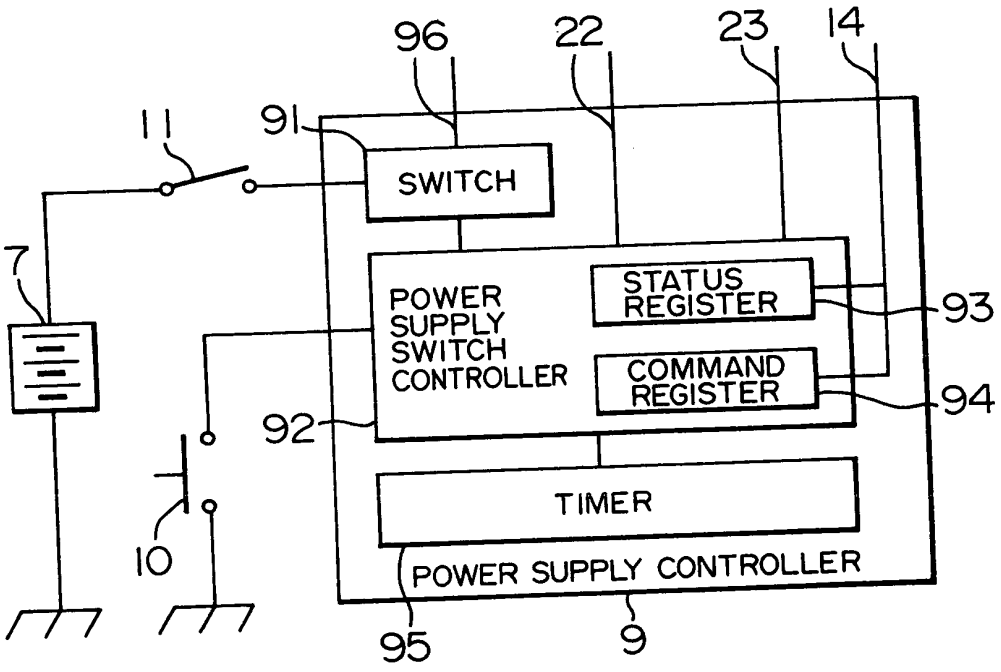

96
22
23
14
11
91
SWITCH
7
POWER SUPPLY SWITCH CONTROLLER
STATUS REGISTER
COMMAND REGISTER
93
94
92
TIMER
10
POWER SUPPLY CONTROLLER
95
9

FIG. 25

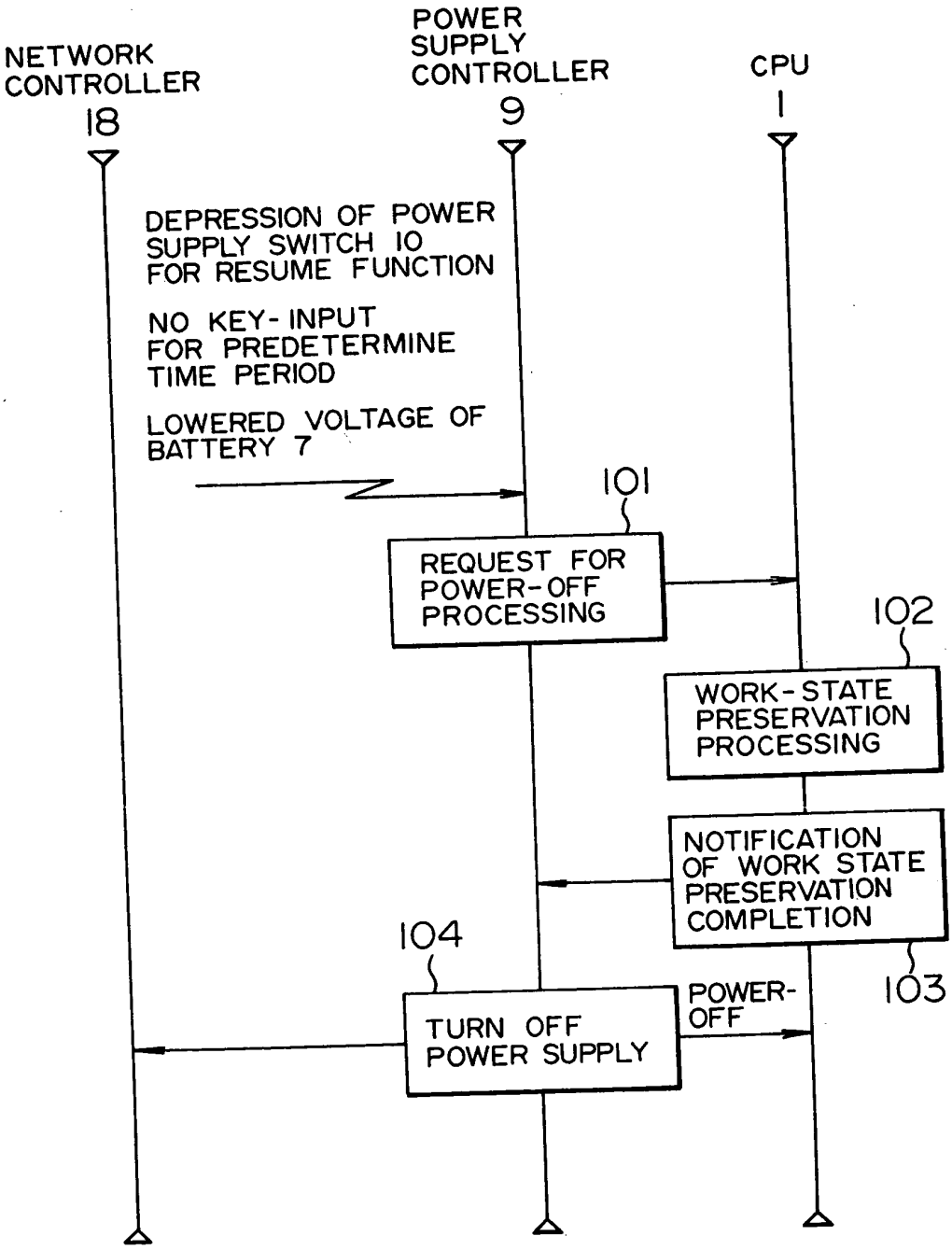

NETWORK CONTROLLER
18
POWER SUPPLY CONTROLLER
9
CPU
1
DEPRESSION OF POWER SUPPLY SWITCH 10 FOR RESUME FUNCTION
NO KEY-INPUT FOR PREDETERMINE TIME PERIOD
LOWERED VOLTAGE OF BATTERY 7
101
REQUEST FOR POWER-OFF PROCESSING
102
WORK-STATE PRESERVATION PROCESSING
NOTIFICATION OF WORK STATE PRESERVATION COMPLETION
103
104
TURN OFF POWER SUPPLY
POWER-OFF

FIG. 26

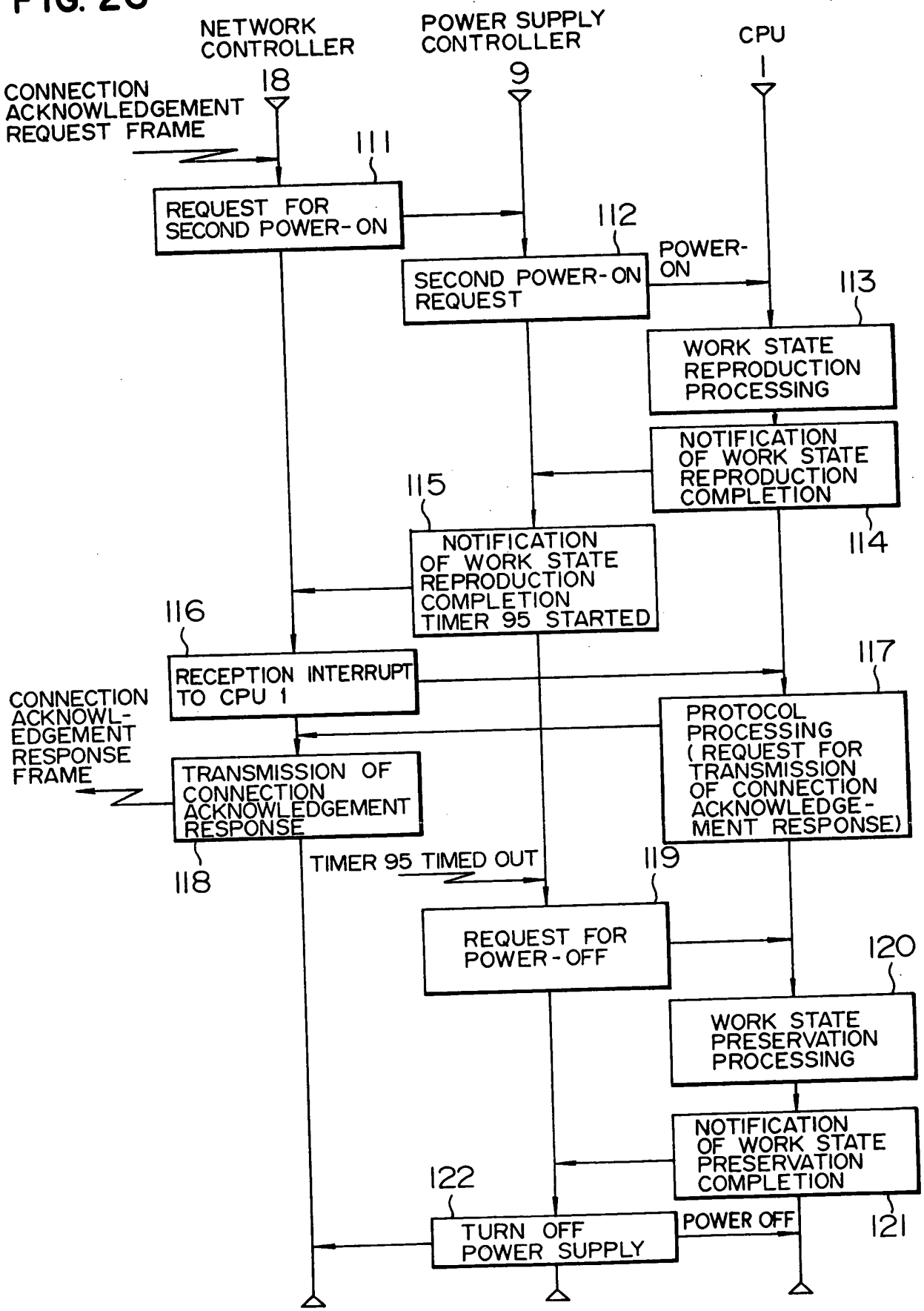

NETWORK CONTROLLER
POWER SUPPLY CONTROLLER
CPU
18
9
1
CONNECTION ACKNOWLEDGEMENT REQUEST FRAME
111
REQUEST FOR SECOND POWER-ON
112
SECOND POWER-ON REQUEST
POWER-ON
113
WORK STATE REPRODUCTION PROCESSING
NOTIFICATION OF WORK STATE REPRODUCTION COMPLETION
114
115
NOTIFICATION OF WORK STATE REPRODUCTION COMPLETION TIMER 95 STARTED
116
RECEPTION INTERRUPT TO CPU 1
117
PROTOCOL PROCESSING (REQUEST FOR TRANSMISSION OF CONNECTION ACKNOWLEDGE-MENT RESPONSE)
CONNECTION ACKNOWL-EDGEMENT RESPONSE FRAME
TRANSMISSION OF CONNECTION ACKNOWLEDGEMENT RESPONSE
118
TIMER 95 TIMED OUT
119
REQUEST FOR POWER-OFF
120
WORK STATE PRESERVATION PROCESSING
NOTIFICATION OF WORK STATE PRESERVATION COMPLETION
121
122
TURN OFF POWER SUPPLY
POWER OFF

FIG. 27

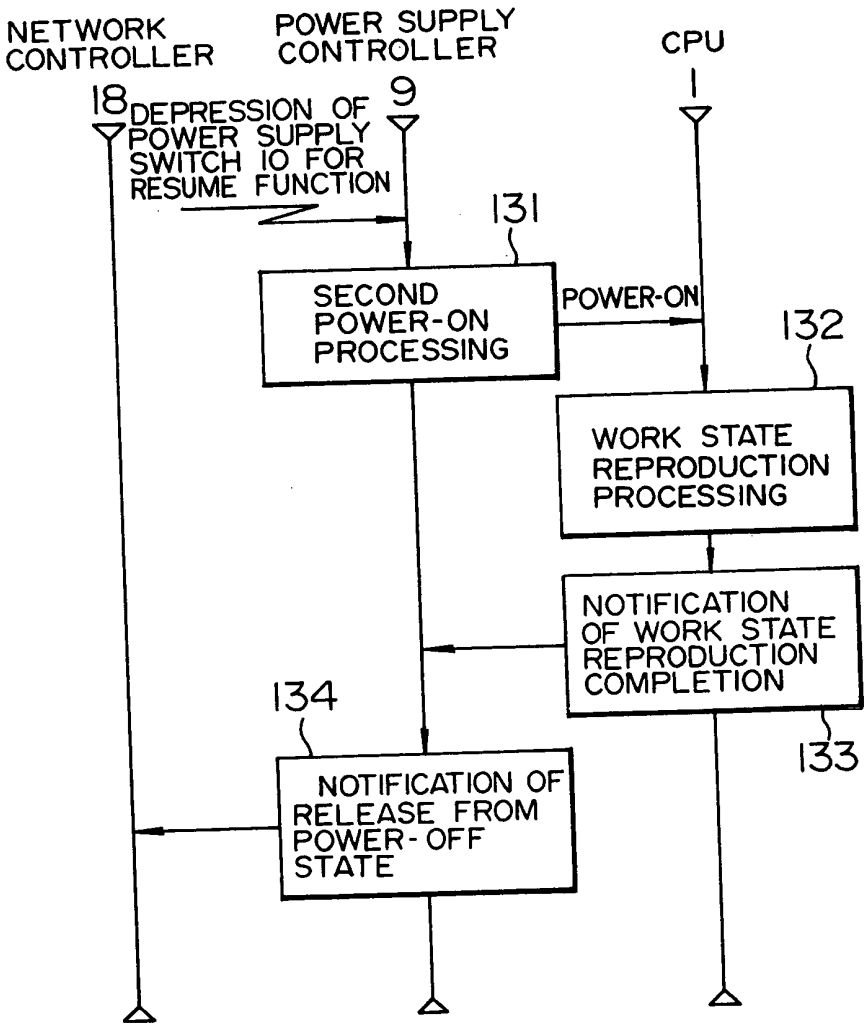

NETWORK CONTROLLER
POWER SUPPLY CONTROLLER
CPU
18
9
1
DEPRESSION OF POWER SUPPLY SWITCH 10 FOR RESUME FUNCTION
131
SECOND POWER-ON PROCESSING
POWER-ON
132
WORK STATE REPRODUCTION PROCESSING
NOTIFICATION OF WORK STATE REPRODUCTION COMPLETION
133
134
NOTIFICATION OF RELEASE FROM POWER-OFF STATE

FIG. 28

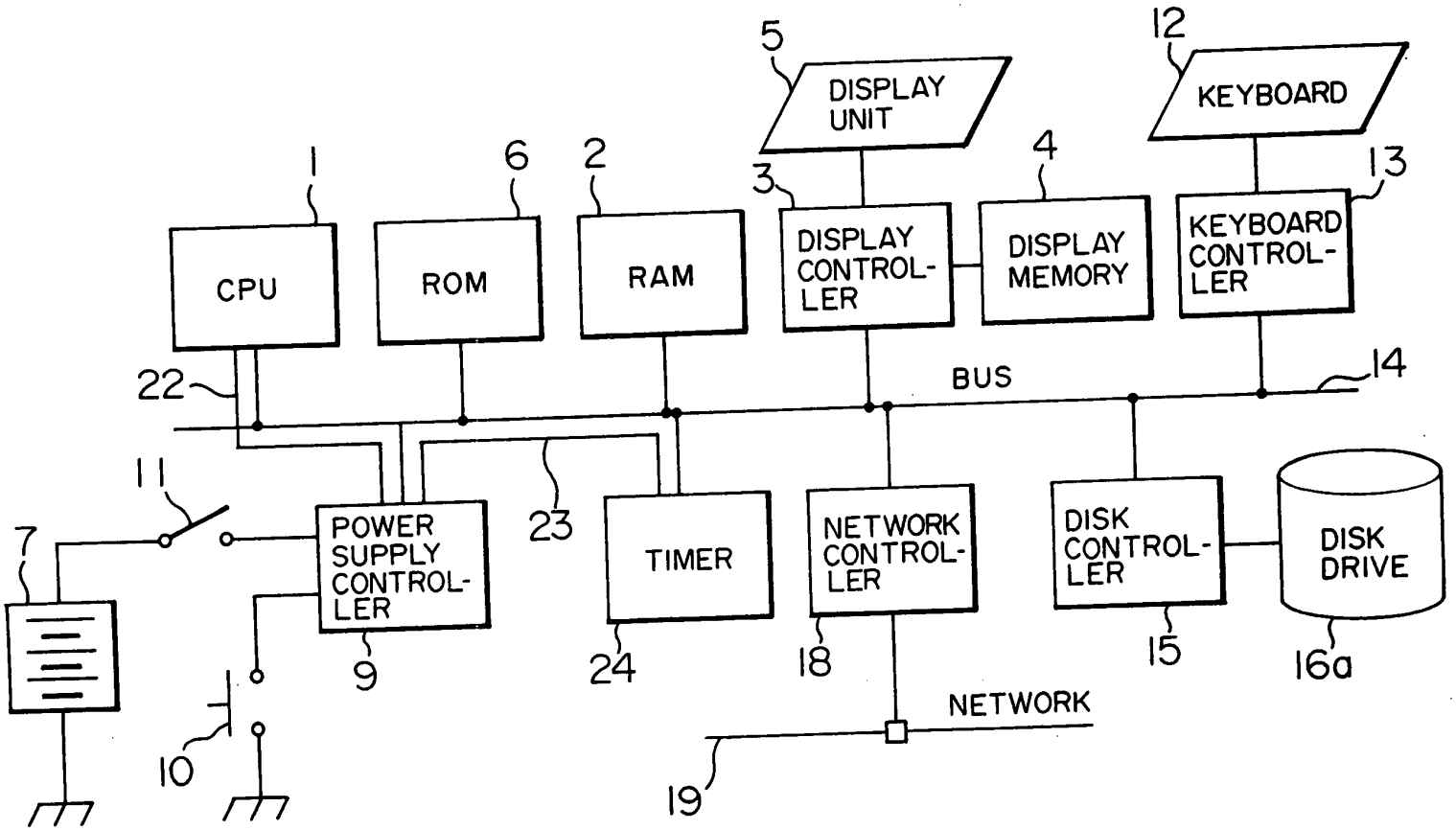

5
DISPLAY UNIT
12
KEYBOARD
1
6
2
3
4
13
CPU
ROM
RAM
DISPLAY CONTROL-LER
DISPLAY MEMORY
KEYBOARD CONTROL-LER
22
BUS
14
11
23
7
POWER SUPPLY CONTROL-LER
TIMER
NETWORK CONTROL-LER
DISK CONTROL-LER
DISK DRIVE
9
24
18
15
16a
10
NETWORK
19

FIG. 29

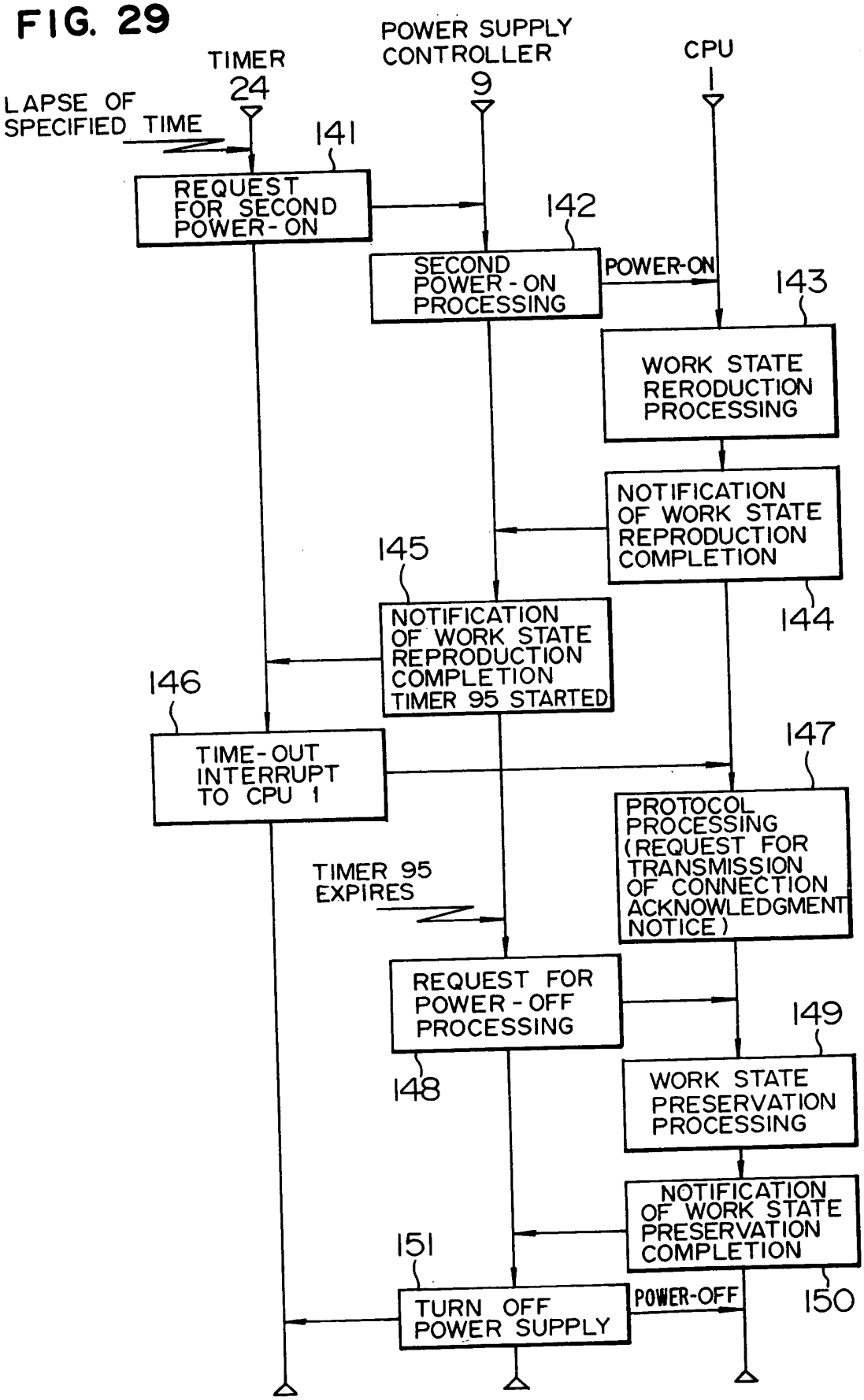
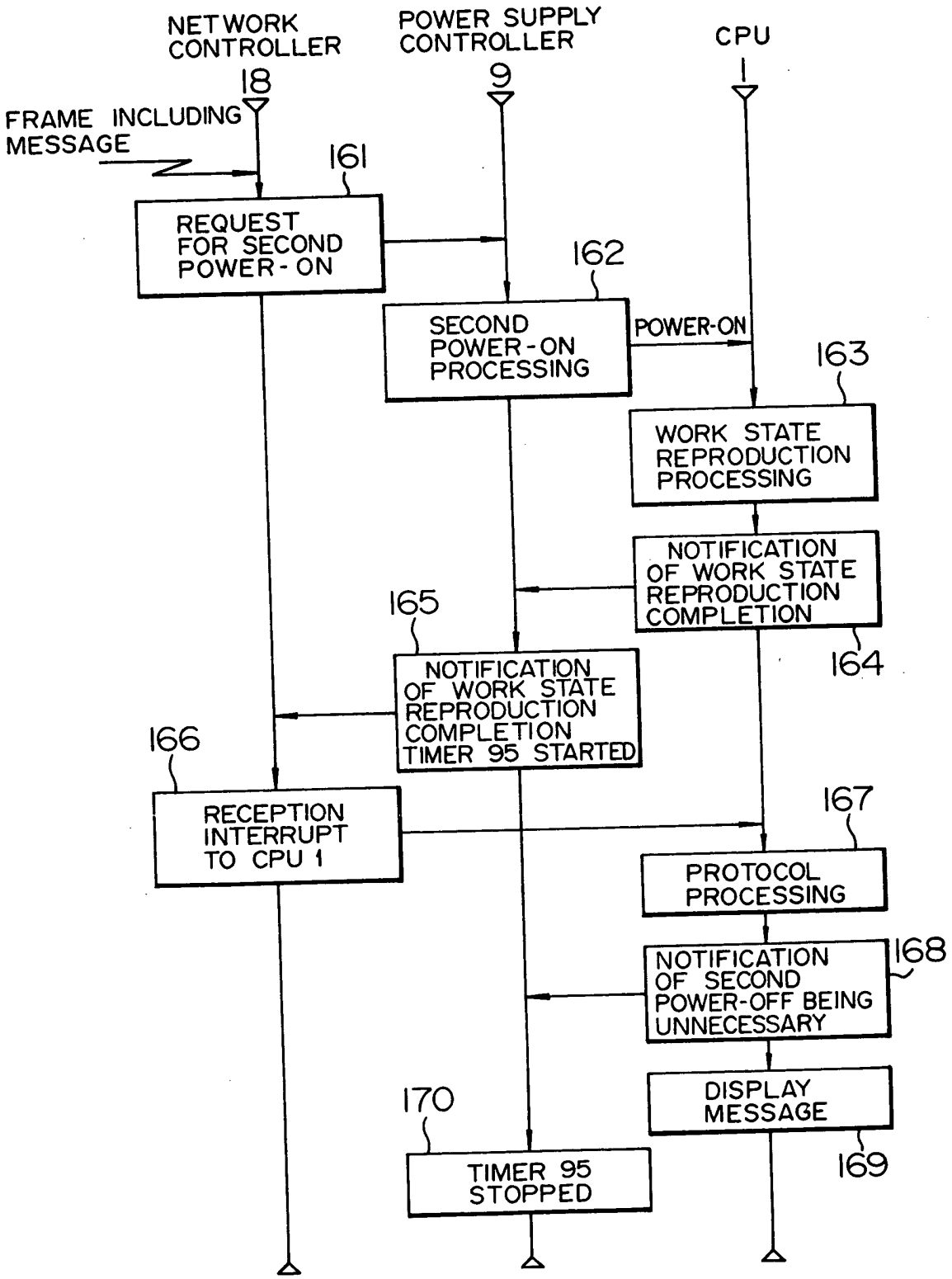

TIMER
24
POWER SUPPLY CONTROLLER
9
CPU
1
LAPSE OF SPECIFIED TIME
141
REQUEST FOR SECOND POWER-ON
142
SECOND POWER-ON PROCESSING
POWER-ON
143
WORK STATE REPRODUCTION PROCESSING
NOTIFICATION OF WORK STATE REPRODUCTION COMPLETION
144
145
NOTIFICATION OF WORK STATE REPRODUCTION COMPLETION TIMER 95 STARTED
146
TIME-OUT INTERRUPT TO CPU 1
147
PROTOCOL PROCESSING (REQUEST FOR TRANSMISSION OF CONNECTION ACKNOWLEDGMENT NOTICE)
TIMER 95 EXPIRES
REQUEST FOR POWER-OFF PROCESSING
148
149
WORK STATE PRESERVATION PROCESSING
NOTIFICATION OF WORK STATE PRESERVATION COMPLETION
151
TURN OFF POWER SUPPLY
POWER-OFF
150

FIG. 30


NETWORK CONTROLLER
18
POWER SUPPLY CONTROLLER
9
CPU
FRAME INCLUDING MESSAGE
161
REQUEST FOR SECOND POWER-ON
162
SECOND POWER-ON PROCESSING
POWER-ON
163
WORK STATE REPRODUCTION PROCESSING
NOTIFICATION OF WORK STATE REPRODUCTION COMPLETION
164
165
NOTIFICATION OF WORK STATE REPRODUCTION COMPLETION TIMER 95 STARTED
166
RECEPTION INTERRUPT TO CPU 1
167
PROTOCOL PROCESSING
NOTIFICATION OF SECOND POWER-OFF BEING UNNECESSARY
168
DISPLAY MESSAGE
169
170
TIMER 95 STOPPED